BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico

February 27, 1962

EXAMINER HEARING

IN THE MATTER OF:

Application of G. W. Strake for an order creating a new oil pool, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order creating a new oil pool to be designated as either the Hackberry-Seven Rivers Pool or Hackberry-Capitan Pool, and comprising the NE/4 of Section 25, Township 19 South, Range 30 East, Eddy County, New Mexico. The discovery well is the G. W. Strake Le Bow-Federal Well No. 4, located in Unit H of said Section 25.

CASE NO. 2501

BEFORE: Elvis A. Utz, Examiner

TRANSCRIPT OF HEARING

MR. UTZ: Case 2501.

MR. MORRIS: Application of G. W. Strake for an order creating a new oil pool, Eddy County, New Mexico.

MR. BRATTON: If the Commission please, Howard Bratton on behalf of the Applicant. We have two witnesses to be sworn.

(Witnesses sworn.)

MR. BRATTON: If the Commission please, I will make a few brief remarks as to my understanding as to the occasion for this particular Hearing. Mr. Strake was drilling some Yates wells in Eddy County; I believe he owns the entire section where he was drilling these wells. In the process of drilling one, he went on down below the Yates and came upon another formation, completed

his well in that formation and he believes it is the Seven Rivers formation. Subsequently, he inquired as to the possibility of drilling another well on that same forty acre tract to the Yates formation and it appearing to be satisfactory, he did and completed another producer, this one in the Yates formation. Subsequently, apparently some question has arisen in the Commission's mind as to whether the lower formation is the Seven Rivers or possibly a part of the Capitan formation, and I believe the advertisement is for an oil pool, either the Seven Rivers Pool or the Capitan Pool. We believe it is possibly Seven Rivers and will so indicate in the testimony. However, our purpose and our evidence here will be directed primarily to the fact that there are two separate formations, the Yates and this lower Seven Rivers or Capitan, whatever the Commission might decide that it is. I don't think we have an overly strong preference whether it is the Seven Rivers or Capitan. Our purpose and our evidence here will be directed to the fact that we are talking about two different pools.

(Whereupon, G. W. Strake Exhibits Nos. 1,2,&3 marked for Identification.)

JOHN E. DAVIS,

called as a witness herein, having been first duly sworn on oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. BRATTON:

Q Will you state your name, by whom you are employed and in what capacity?

A I am John E. Davis, employed by Mr. George W. Strake of Houston and representing him as West Texas-New Mexico area Geologist.

Q Would you state, very briefly, your professional and educational background?

A I have a Bachelor of Science degree in Geology from Texas Technological College and I have practiced Geology and Geophysics for eight years.

Q Have you been familiar with and acquainted with the area, the North Hackberry area in Eddy County, New Mexico?

A Yes, sir. I have been present on the drilling of sixteen wells in this immediate area.

Q How long have you been with Mr. Strake?

A Three years.

MR. BRATTON: Are the witness's qualifications acceptable?

MR. UTZ: Yes, sir, they are.

Q (By Mr. Bratton) Mr. Davis, refer to your Exhibit Number One, if you will, please. Explain to the Commission what that Exhibit is.

A This is a section taken in Township 19 South, Range 30 East, showing Section 25, and the subject Northeast quarter outlined in red. It is a structure contour map with a datum at

the top of the Yates. The three wells you see circled in red are Seven Rivers Wells either producing from or capable of producing from this lower zone. The remainder of the wells are Yates Wells in the area.

Q The reason the Northeast quarter of Section 25 is circled in red, that's the area that's asked to be designated as the North-Hackberry-Seven Rivers or North-Hackberry-Capitan Pool?

A Correct.

Q Now, the Southeast of the Northeast of Section 25 shows your well Number Four, that is a Capitan Well?

A Correct.

Q It is not completed in the Yates?

A No, it is not.

Q The well Number Nine is a Yates Well?

A It is.

Q So those two wells are located in the same forty?

A Correct.

Q Your Well Number Seven is completed in the Capitan or Seven Rivers?

A It is.

Q And your Well Number Six is what, Mr. Davis?

A It's presently completed in the Yates. However, pipe is set through the Capitan or Seven Rivers and it has been tested and is capable of producing.

Q In other words --

MR. UTZ: From either zone?

A Yes, sir.

Q (By Mr. Bratton) In other words, upon creation of a new pool you would dual that well?

A Yes, sir.

Q Is there anything further you want to explain about your Exhibit Number One, Mr. Davis?

A No, sir. I see nothing further at this time.

Q Refer, then, to your Exhibit Number Two.

A These are two Cross-sections, not structure cross-section, they are constructed as correlated cross-sections across this area to show the relationship of the two zones.

Q Your legend is at the bottom?

A Yes.

Q And your diagram of the cross-section?

A You can see the cross-section on the small map at the bottom. The AAA Prime cross-section is the Northwest-Southeast cross-section correlated into the area from the discovery well in Section 23, across Section 25.

Q That's the Union Federal Well?

A That is Union Federal Number One in Section 22. The BB Prime is actually almost a North-South cross-section constructed to take in our offset operators Yates Well, the Number Six and also back into our Seven Rivers. These cross-sections, as I

said before, were constructed to show the relation of the two zones to each other and, also, to show separation between the two zones, that being the shale partition that you see on the logs and the dense dolomite that is colored in blue crossing the entire section.

Q Going to your Yates, your Yates pay zone is indicated in green. Those are not necessarily your perforations, are they, Mr. Davis?

A They are not. They show the zones that would be productive.

Q What is that zone?

A That is a very fine grain, silty sand.

Q I take it that correlates throughout all of these wells, is that correct?

A Yes, sir, it can be picked from any well in this area.

Q Coming on down the hole, then, your blue colored line there indicates what, Mr. Davis?

A That is dense dolomite that carries throughout the area. That, in itself, has shale partition. It would serve definitely as a barrier.

Q Could there be communication above and below that barrier?

A No, sir, I can't see that there could. These wells have been cored and we have core analysis and that's an extremely dense zone.

Q Coming on down the hole you have in your Federal Seven, Federal Four and Federal Six, your red indicates the presence of the Seven Rivers or Capitan, is that correct?

A Correct.

Q What is that zone?

A That is a very weathered dolomite.

Q How much separation is there between the Yates and the Seven Rivers?

A From the base of our pays, the base of the Yates pay to the top of the Seven Rivers is approximately one hundred sixty-eight feet. That will carry through the area, plus or minus a few feet.

Q Are any of these wells completed in open hole, Mr. Davis?

A They are.

Q Which ones?

A The Number Nine, which is one of the wells in our forty acres.

Q That is bottomed right at the bottom of the Yates?

A Right at the bottom of our Yates pay.

Q Yes.

A Our Number Eight. I beg your pardon, the pipe was set through Number Eight, however, it's still up in the Yates formation.

MR. UTZ: Which well was that again?

A I said the Number Eight, but pipe was set there through the Yates formation. The Number Ten is an open hole completion. The Number Eleven, which is presently being completed, is an open hole.

MR. UTZ: The Number One?

A Number Eleven. Nine, Ten, and Eleven.

MR. UTZ: Where is that well located?

A This is to the south of the area designated right here.

MR. UTZ: Number Ten was completed in which zone?

A It's completed in the upper zone.

Q (By Mr. Bratton) The Yates zone?

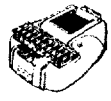
A Yes, sir, it was drilled actually in the Seven Rivers but plugged back.

Q In your opinion, Mr. Davis, what is this bottom zone? Is that Seven Rivers or is it Capitan, or what is it?

A We realize that we are in a problem area being on top of the shelf or reef, but as well as I could correlate it in, it is definitely Seven Rivers.

Q On what do you base that?

A I used the Humble Federal Bogle which is up in 16 South, 30 East, as a type log and this particular log was picked by the Roswell Geological Society to establish their Artesia Crop, which has now been accepted by the A.A.P.G. as a type log and correlating the two; there's very good correlation between the two zones.



MR. UTZ: What was the location of that well?

A 16 South, 30 East, Section 30.

MR. UTZ: That was the Humble what?

A The Humble Federal Bogle Number One. They're using it as their type log.

MR. UTZ: That's the United States Geological Society?

A Yes, sir.

Q (By Mr. Bratton) Show the Examiner how you have correlated that and how you come to the conclusion this is the Seven Rivers, Mr. Davis.

A This is the Federal Bogle log, with their tops picked, that's the Yates and Seven Rivers top and our Union Federal Number One, the discovery well in the area. I've used the Otello silt as a correlation point. It fits very well with the silt we have here in our Tansile. The top of our Yates as it breaks off here putting our Seven Rivers right into the Seven Rivers even with the Denz. There, Seven Rivers runs right on into the Queen and they can get the correlation down the hole but we did not have the Queen.

MR. UTZ: Does it go into the Queen or Davit?

A Just Davit.

MR. BRATTON: We can make these available as Exhibits.

MR. UTZ: I think it would be worth while.

A I will have to make an arrangement with Humble, so if I may, I'll make you a copy and send it to you.

MR. UTZ: Certainly, and mark the correlation points on it, if you will.

Q (By Mr. Bratton) Mr. Davis, the definition of a pool in the regulations is, each zone of a general structure, which zone is completely separated from any other zone in the structure is covered by the word "Pool" as used herein. In your opinion is the Yates Pool a separate pool from the Seven Rivers or Capitan in this area in accordance with that definition?

A I think it definitely is.

Q What were these cross-sections made off of?

A They're made from Gamma Ray, Sonic logs.

Q Gamma Ray and Sonic logs?

A Yes.

Q Did you prepare Exhibits Number One, Two and Three?

A Yes, sir.

MR. BRATTON: We would offer in evidence Exhibits Number One, Two and Three.

MR. UTZ: Without objection, Exhibits One, Two and Three will be entered into the record.

(Whereupon, G. W. Strake Exhibits Nos. 1,2 & 3 introduced into Evidence.)

MR. BRATTON: We have no further direct questions of this witness.

CROSS EXAMINATION

BY MR. UTZ:

Q This correlation from the Humble Well, the Bogle Number One, is how far apart?

A We are three townships away. It's a long distance but difficult to carry continuously that far because of the lack of deep wells.

Q In your opinion, you had no trouble carrying your markers over that distance?

A Well, taking the two logs I think they correlate very well that distance.

Q You didn't have any logs in between?

A No, sir, I couldn't locate enough logs to actually carry the section straight through. Now, you approach this reef from the south; we are actually in a back reef facies, as you know, here, and you have to come over the reef and beds disappear altogether; the Capitan is present. Coming from the other direction, from the Federal Bogle, where they have the Queen and all, it begins to disappear and has disappeared until we get to our well. Dick Stamnitz tried to bring it in and he threw up his hands before he got through. He said, "I'm satisfied that you have separate zones, however, I'm worried about the nomenclature of our geology." I think that was probably his question. The difficulty in correlating in Seven Rivers rather than Seven Rivers or Capitan, or Seven Rivers and Capitan zone.

Q Well, the Capitan zone is a new one to me. Is it a part of the Seven Rivers?

A Well, they are equivalent.

Q They are equivalent?

A Yes, sir. He thinks it might be or could possibly be a finger of this Capitan reef into the Seven Rivers. The Capitan was growing, the reef was building at the same time that deposition took place in our Seven Rivers, Yates Seven Rivers, Queen Grayburg, they're all equivalent.

Q How would you describe the Capitan zone, the zone in which you are completed here?

A Lithology?

Q Yes.

A It is a weathered dolomite.

Q A weathered dolomite?

A Yes, sir.

Q Is it also a weathered dolomite in the Humble Well?

A The Seven Rivers is described as a buff to grey dolomite, sometimes lytic. In places where you find it producing, you find the weathered zone and the vugs in the dolomite. They did not have production in that and their only description was a buff to grey colored dolomite. We certainly have that from cores. We picked our top from the cores before we ever logged; it's a distinct break in lithology. Especially in these wells that are producing, dolomite is so weathered and had so many vugs that it wouldn't come out of the core barrel in one piece. You usually get it out in small chunks, saturated with oil, of course.

Q You are satisfied that there is no vertical communication between the Capitan zone and the Yates?

A Yes, sir, I am.

MR. UTZ: Any other questions?

BY MR. MORRIS:

Q Along the same lines, Mr. Davis, as I understand this Capitan reef, it's a formation that might be correlative in time with not only your Yates, but with other formations that lie above and below the Yates, is that correct?

A That's correct.

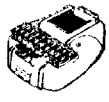
Q And the question that was posed in your conversations with Mr. Stamnitz was whether this might be a finger of the Capitan reef that Mr. Strake was completed in rather than the Seven Rivers?

A Yes.

Q Could you summarize for me your reasons for believing it to be in the Seven Rivers rather than the Capitan?

A Well, I don't have much argument for that except this correlation that I have just shown you and the description itself. Your Capitan is usually found to be a white crystalline dolomite and we don't see, we get a sugary texture in some of this crystalline but it's just an abrupt difference in the two.

Q If the Capitan reef does inter-finger with the Yates and Seven Rivers, maybe even the Tansile, you feel that even if that inter-finger does occur that there's no communication



between the formation?

A Not in this area.

Q Not in this area?

A No.

MR. MORRIS: Thank you.

MR. PORTER: I have a question.

BY MR. PORTER:

Q Mr. Davis, there is also a Hackberry-Yates Pool existing in this particular area, is that right?

A Yes, sir.

Q Do you know whether or not any other wells in the Hackberry-Yates Pool have any of the Seven Rivers formation open?

A I know several, in fact, this well right here, they attempted completion in the Seven Rivers.

MR. UTZ: Which well is that?

A That's Mr. Hasking's Number Six there in 30.

Q (By Mr. Porter) You say they attempted to complete that in the Seven Rivers?

A Yes. That was drilled after we drilled this. They were shooting for Seven Rivers.

Q Out of the Seven Rivers?

A Yes, but he failed to complete, he got water.

Q Did he get anything?

A He came back up and completed in the Yates and made it a twenty-four barrel a day well. We attempted in this one.

Q This one?

A Our Number Five. And it was wet also.

Q That is in the Northeast of the Northeast of 25?

A This well was drilled with cable tools and bailed sulphur water out of it.

Q You don't know of any wells that are producing?

A No, sir, there aren't any around us there within a mile.

MR. PORTER: I believe that's all I have.

BY MR. UTZ:

Q It would look, then, like that this zone is pretty limited, would it not?

A Yes.

Q Now, the pool designation, what is the name of the pool here for the Yates?

A It's North Hackberry.

Q North Hackberry?

A Yes.

MR. PORTER: You are asking for the Northeast quarter of that section --

A To be designated.

MR. PORTER: -- to be designated a pool?

A Yes, sir.

MR. BRATTON: Actually, Mr. Porter, I believe the three wells in red are the ones that right now we feel, well, two of them are completed, the Four and the Seven are completed

in the Seven Rivers, the Six we can complete in the Seven Rivers. It's completed in the Yates and we can also make a producer out of the Seven Rivers. We would be more interested, actually, it could be the South Half of the Northeast Quarter or Section 25 would be sufficient, it doesn't make much difference. It was advertised as the Northeast Quarter of 25.

MR. PORTER: Well, the South Half of the Northeast Quarter wouldn't take in Number Six, would it?

MR. BRATTON: No, and it was advertised as the Northeast Quarter of 25, I don't know why, but it could be extended to cover that at a later date.

MR. PORTER: Yes.

MR. UTZ: Any other questions? The witness may be excused.

(Witness excused.)

JERRY W. WARD,

called as a witness herein, having been first duly sworn on oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. BRATTON:

Q Would you state your name, occupation and by whom employed?

A Jerry W. Ward. I'm a Petroleum Engineer for G. W. Strake.

Q Will you state, very briefly, your professional and

educational qualifications, Mr. Ward?

A I have a Bachelor of Science degree in Petroleum Engineering from Texas A & M. I was employed approximately one year by American Republic's Corporations, four years by Sinclair Oil and Gas Company and three by G. W. Strake.

Q Have you made a study of the North Hackberry area in Eddy County?

A I have.

Q And you are familiar with the matters that are contained in this application?

A Yes, sir.

MR. BRATTON: Are his qualifications acceptable?

MR. UTZ: Yes, sir.

Q (By Mr. Bratton) Mr. Ward, you studied the two formations that we're talking about here, the Yates and the Seven Rivers?

A Yes, sir.

(Whereupon, G. W. Strake Exhibits Nos. 4 through 8 marked for Identification.)

Q Have you constructed an isopac map of the Yates and a structure map of the Seven Rivers which are Exhibits Number Four and Five respectively?

A Yes, sir.

Q First of all, explain to the Commission why you have an isopac of one and a structure map of the other.

A The isopac is constructed on the net productive interval of the Yates aand as selected from sonic logs and from core analyses. The purpose of the map is to show the productive area and limits of this Yates reservoir, insofar as Section 25 is concerned.

Q What type of drive is the Yates?

A Solution gas.

Q What type of drive do you have in your Seven Rivers or Capitan?

A It appears to be a water drive.

Q Explain, briefly, your isopac map Number Four, Exhibit Number Four, Mr. Ward.

A The isopac. Well, as I have stated, the net productive intervals as selected for each well and from which the contour lines were drawn, these intervals were selected on the basis of the sonic logs as having adequate porosity and permeability to produce and, also, with the basis of core analysis which we have on some seven wells in the Yates.

Q Your dashed lines are the extrapolations, are they, and your solid lines are the ones you are a little more sure of?

A Yes, sir. The solid lines, of course, have the better control, while the dashed lines are extrapolations. I did not indicate a closure on the south end with the zero and five foot line because we feel that there is a possibility it can build thickness and porosity in that area. We have no basis for that.

Q A later Exhibit will show why you believe this to be a dissolved gas drive and the Seven Rivers to be a water drive, is that correct?

A Yes, sir. Of course, one basis which could show the solution gas drive is the fact that this Yates reservoir is a limited reservoir. That's indicated by the zero line on the isopac.

Q Go to your structure map on your Seven Rivers-Capitan. What does it reflect?

A This is a structure map which has been made on the top of the productive interval of the Seven Rivers or the Capitan and I have selected a water-oil contact which is shown on the map to be a plus 1280 above sea level. The water-oil contact would represent the productive limit of the reservoir since it does appear to be a water drive type field.

Q Your Hasking's well to the east, that was below water, wasn't it?

A Yes.

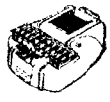
Q And your Number Five up here in the Northeast, to the Northeast?

A It produced water.

Q It produced water?

A Yes.

Q Going around to the west, do you have pretty good control over there?



A Yes, sir. Of course, our control on the west, as you can see, is with the State Well Number One and the Le Bow-Federal Number One, we have control in between the two wells with the contour line.

MR. UTZ: Did you have water in one of those wells?

A As indicated by a core analysis on Well Number One.

MR. UTZ: Which Number One?

A The Le Bow-Federal Number One, it appeared from water saturations as determined by core analyses, it appeared to be wet below the plus 1280.

Q (By Mr. Bratton) So you have reasonably good control to the Northeast and West and to the Southwest also, would that be correct?

A Yes, sir.

Q This pool might open up all to the south, is that a possibility?

A That is a possibility. As you can see, there are no wells at present drilled outside the water-oil contact to the South which, if a well were drilled and the structure came up higher above the water-oil contact, it certainly has a chance of being productive.

Q So your Number Seven, your Number Four and your Number Six are your three wells, now, that could produce from this Seven Rivers, and your Number Ten might possibly produce from it?

A Yes, sir.

Q Let's go into your Exhibit Number Five, Mr. Ward, and explain what that is.

A Exhibit Five is a table which has been entitled "Well Data Comparison" which will show the contrast of certain well data for the two different zones. As you can see, we have set it apart into two sections; Wells Number Four and Seven which are producing from the Seven Rivers or the Capitan in the upper section; and, Six, Eight, Nine and Ten as producing from the Yates in the lower. We have recorded production tests, a production test with the significant data for that as well as bottom hole pressure and oil gravity. Probably the most significant thing shown on this table is the zero gas-oil ratio for the Seven Rivers or Capitan reservoir. Zero is indicated zero because the gas volume, if any, is too small for us to measure with available equipment. Whereas the gas-oil ratio for the Yates sand ranges from a minimum of 490 cubic feet per barrel to a maximum of 1,004. Probably the other significant thing that the table shows is the contrast in oil gravity, the representative gravity for the Seven Rivers being approximately 18.4 and for the Yates about 30.7 of crude oil.

Q You have had separate tankage for these two Seven Rivers wells, is that correct?

A Yes, sir.

Q And your gravities are off the runs from that tankage and --

A Yes, sir.

Q -- and from the separate tankage on the Yates wells?

A Yes, sir.

Q Your Yates wells didn't make any water also, is that correct?

A Not at the time these tests were taken.

Q Is there anything else significant by way of comparison of the two formations?

A Well, of lesser significance on this table probably is the fact that the predominance of the flowing wells are in the Yates whereas the two Seven Rivers wells are pumpers. There is one pumping well in the Yates, but we feel that it could possibly flow a small volume if we gave it a chance, but we were not recovering our load oil fast enough after the well was completed and we set pumping equipment on it to help it along.

Q But your differences in gravity and your differences in gas-oil ratio, Mr. Ward, is there any doubt in your mind that there is complete separation between these two formations?

A No, sir.

Q Going to your next Exhibit, your crude oil analyses?

A This is a table comparing the partial crude oil analysis of the Seven Rivers crude and the Yates crude. We were advised, probably I think it was last Thursday, that this would be good data to prove the difference in the reservoirs which, of course, limited our time in having this analysis made, so what we

had to do was to have our man in New Mexico take samples of that oil to the Continental Refinery in Artesia and they made the analysis for us in their laboratory, but they are not allowed to sign or in any way enter into this.

Q They are not a commercial laboratory?

A They are not a commercial laboratory and they don't charge for this service so they couldn't sign the ticket. However, we feel that these data are representative and should we have the same analyses run by a commercial lab, I don't think there would be anything much different than this. We can go right down the line in comparing.

Q Your Seven Rivers came from the Number Four, is that correct?

A That's correct.

Q And your Yates came from the Number Nine?

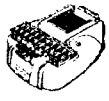
A That's correct.

Q Those are both on the same forty acre tract?

A Yes, sir. The oil samples were taken directly from the wells as they were producing.

Q Go down and compare those, if you will.

A As you can see, the gravity comparison is 18.1 degrees API for the Seven Rivers as compared to 31.4 for the Yates. The sulphur for the Seven Rivers of 1.75 as compared to 1.20 percent for the Yates. The viscosity at 100 degrees Fahrenheit for the Seven Rivers is 597 centipoises, while for the Yates it's 69



centipoises. The color on the third dilution is described as 5.5 for Seven Rivers and 3.5 for the Yates. On the actual distillation, the Seven Rivers crude reached a cracking point with 40 percent over at 636 degrees Fahrenheit where the Yates crude had 56 percent over at 680 degrees Fahrenheit.

Q Does this confirm your well data comparison information that these two crudes could not be coming from a common source of supply?

A Yes, sir.

Q Going on to Exhibit Number Seven, Mr. Ward, is that a statement of the runs from these two tanks?

A Yes, sir. That's a statement of crude oil runs from our Le Bow-Federal lease.

Q There, again, this shows the difference in gravity between the two pools?

A Yes, sir, as indicated by the table, there is a spread in the gravity in the Seven Rivers formation ranging from 18.4 as high as 24.0 degrees API. However, we feel that these gravities ranging as high as 24 are not truly representative of the Seven Rivers crude because we had used Yates crude in completing the wells for fracturing and treating so the oil in the tanks was diluted by Yates crude and made the higher gravity.

Q But your average crude is around 20?

A It appears to be slightly over 20 degrees, the average.

Q Is there anything further you care to state with

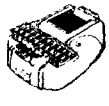
reference to any of these Exhibits, Mr. Ward?

A Perhaps on the determination of the type of drive in the two reservoirs, I decided pretty early that the Yates reservoir was solution gas because of the limitation of the reservoir, plus the fact that all of the wells flowed with a gas-oil ratio and it appeared that all of its energy had to come from solution gas. Whereas the Seven Rivers appears to be continuous with porosity and permeability through this area which gives it a possibility of having an aquifer; and the saturation, the water saturation on the cores and the fact that the wells tested water from the Seven Rivers, plus the fact that there was no gas produced from the Seven Rivers, that all these things supported the fact that the Seven Rivers seems to have a water drive.

Q Mr. Ward, if you are to open both of these formations into a common well bore, what would happen?

A Well, certainly they already have different reservoir pressures which would introduce the possibility of the higher pressure reservoir bleeding into the lower pressure reservoir, that's if you did it today. But in the future, one reservoir will certainly deplete before the other and that condition would become more pronounced. So the net effect of producing the two reservoirs from the same well bore would probably be, in my opinion, waste of petroleum.

Q In your opinion, you heard the definition I read, Mr.



Ward, of a pool, are these two separate pools, within that definition?

A Yes, sir.

Q If you were to produce them jointly into a well bore, would waste occur?

A I think that it possibly could.

Q Did you prepare Exhibits Numbers Three through Seven? Exclusive of that analysis made by the Continental?

A Yes, sir, I guess mine started with Four.

Q Four?

A Yes, sir.

MR. BRATTON: We would offer in evidence Exhibits Number Four through Seven.

MR. UTZ: Is it Seven or Eight?

MR. PORTER: You want to offer all of them?

MR. BRATTON: We'll offer all of them

MR. UTZ: Exhibits Four through Eight are accepted into the record.

(Whereupon, G. W. Strake Exhibits Nos. 4 through 8 introduced into Evidence.)

CROSS EXAMINATION

BY MR. UTZ:

Q Do you have any pressure information on either of these reservoirs?

A We have a bottom hole pressure. It's on exhibit, this

Exhibit that's entitled "The Well Data Comparison". The Well Number Four, the discovery well in the Seven Rivers reservoir, had the required pressure taken on November 23, 1961, at which time the bottom hole pressure was 731 pounds. Then, after the Commission had called this Hearing, we arranged for additional bottom hole pressures to be run, one of which was run on Well Number Four showing it to be 576 pounds in the Seven Rivers, and the Yates sand Wells Number Six and Nine showing 410 and 491 pounds respectively, which would give an average reservoir pressure of the Yates somewhere in the neighborhood of 450 pounds.

Q How do you explain the decrease from 732 to 576 due to production? It's water drive, isn't it?

A Yes, I definitely think it's a water drive and we haven't produced the Seven Rivers reservoir long enough to know much about how it's going to act. But, I believe that the average reservoir pressure of the Seven Rivers is probably higher than 576 at the present time, but we're speaking of a low range of permeability in the Seven Rivers and perhaps we didn't leave it shut in long enough to build up to its true reservoir pressure because at the time this second reservoir pressure was run we had only produced somewhere around two thousand barrels of oil out of Number Four. So that shows it to be a tight reservoir with a water drive and probably we allowed forty-eight hours for the well to build up after it had been shut in, but probably it would take something greater than that to build up a true reservoir

pressure.

Q How long did you leave the bomb in the hole?

A This was a sonalog.

Q Sonalog?

A Yes, sir.

MR. UTZ: Any other questions?

BY MR. PORTER:

Q I have one question. Do you intend to dual the wells in this area?

A We would intend to dual at least Well Number Six. We have equipped Well Number Six with large enough casing to permit running two strings of tubing.

MR. PORTER: That's all I have.

MR. UTZ: The witness may be excused.

(Witness excused.)

MR. UTZ: I do have one other question of Mr. Davis. Was there any disagreement as to whether or not this Capitan zone was a part of the Yates between you or Stamnitz or anyone else involved?

MR. DAVIS: No.

MR. UTZ: That's all. Anyone else have a statement?

The case will be taken under advisement. The Hearing will be adjourned.

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, ADA DEARNLEY, NOTARY PUBLIC in and for the County of Bernalillo, New Mexico, do hereby certify that the foregoing and attached transcript of hearing was reported by me in stenotype and that the same was reduced to typewritten transcript under my personal supervision and contains a true and correct record of said proceedings, to the best of my knowledge, skill and ability.

Ada Dearnley
NOTARY PUBLIC

My Commission Expires;

June 19, 1963

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 2501, heard by me on Oct. 22, 1962

Examiner
New Mexico Oil Conservation Commission